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Claim Amendments:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A process for producing long lengths of a layered superconductor comprising:

a. providing a buffered metal substrate tape coated with precursors of $REBa_2Cu_3O_7$ where RE is a rare earth;

b. translating the tape through a precursor conversion ~~and film growth~~ zone in a process chamber;

c. introducing oxygen and water vapor through a showerhead into the precursor conversion ~~and film growth~~ zone while translating the tape; and

d. heating the ~~coated substrate~~ tape to a temperature in the range between about 700°C. to about 850°C.;

where the pressure in the process chamber is in the range between about 1 Torr to about 760 Torr and where the substrate resides in the ~~process~~ precursor conversion zone for a period of time sufficient to convert the precursors to a superconducting coating epitaxial to the buffer layer.

2. (Original) The process of claim 1 where the substrate is selected from the group consisting of stainless steel and nickel alloys.

3. (Original) The process of claim 1 where the substrate is biaxially textured.

4. (Original) The process of claim 1 where the buffer on the metal substrate tape is selected from the group consisting of YSZ, CeO_2, MgO, $SrTiO_3$, $LaMnO_3$, $SrRuO_3$, Y_2O_3, Gd_2O_3, $LaSrMnO_3$ and combinations thereof.

5. (Original) The process of claim 1 where the pressure in the process chamber is in the range between about 10 Torr to about 760 Torr.

6. (Canceled)

7. (Original) The process of claim 1 where the atmosphere in the process chamber has a dew point between about 40°C. to about 80°C.

8. (Currently Amended) The process of claim 1 where [[the]] a partial pressure of water vapor in the process chamber is between about 1 Torr and about 50 Torr.

9. (Currently Amended) The process claim 1 where ~~portion of~~ the oxygen ~~contained in~~ is introduced through the showerhead with a carrier gas, an oxygen content in the carrier gas ranging ~~ranges~~ between about 10 ppm and 10%.

10. (Currently Amended) The process of claim 1 where [[the]] a partial pressure of the oxygen and water vapor is substantially consistent throughout the precursor conversion ~~and film growth~~ zone.

11. (Currently Amended) The process of claim 1 where the distribution of ~~carrier gas containing~~ the oxygen and water vapor is uniform throughout the precursor conversion and film growth zone.

12. (Currently Amended) ~~The process of claim 1 wherein the oxygen and water vapor are introduced into the precursor conversion and film growth zone through a~~ A process for producing long lengths of a layered superconductor comprising:

a. providing a buffered metal substrate tape coated with precursors of $REBa_2Cu_3O_7$ where RE is a rare earth;

b. translating the tape through a precursor conversion zone in a process chamber;

c. introducing oxygen and water vapor through a showerhead into the precursor conversion zone while translating the tape, the showerhead having a width at least as wide as the sum of the widths of the translating tapes plus the sum of the distances between each of the translating tapes and having a length at least as great as the width; and

d. heating the to a temperature in the range between about 700°C. to about 850°C.;

where the pressure in the process chamber is in the range between about 1 Torr to about 760 Torr and where the substrate resides in the precursor conversion zone for a period of time sufficient to convert the precursors to a superconducting coating epitaxial to the buffer layer.

13. (Currently Amended) The process of claim 1 wherein reaction by-products are removed from the process chamber by a pumping system located proximate to the precursor conversion ~~and film growth~~ zone.

14. (Original) The process of claim 1 wherein the process chamber is a cold-wall chamber.

15. (Currently Amended) The ~~product of the~~ process of claim 1, wherein the showerhead has a plurality of film openings through which the oxygen and water vapor pass.

16. (New) The process of claim 15, wherein the fine openings are evenly spaced.